

**WTC Community-Labor Coalition
Presentation**

to the

EPA WTC Expert Technical Review Panel

May 24, 2005

Presented by:

Catherine McVay Hughes, Community Liaison

and

Micki Siegel de Hernandez, Alt. Community Liaison (Labor)

This presentation is based, in part, on the
WTC Community-Labor Coalition meeting held on
May 11, 2005.

INTRODUCTION

- These community/labor comments refer to EPA's May 2005 Draft Proposed Sampling Program
- Overall, this plan has been expounded upon by the EPA and contains considerable more detail than previous versions
- There are some improvements in the plan, there are some items in the plan that remain unchanged, and there are some elements of the plan that are worse
- We consider these to be "fatal flaws" that will significantly underestimate remaining 9/11 contamination and/or leave contamination in place in workplaces and residences
- We are committed to continue to work with the agency and the panel to make improvements and we thank the panel for their continued attention to this matter
- Since its release two weeks ago, it was not possible to completely analyze the plan and all the associated documents , e.g., dust sampling protocols and the quality assurance project plan -- we will continue to conduct this review and provide feedback
- For this presentation, we will summarize some aspects of the new plan, describe our concerns, and pose questions that remain to be answered or propose solutions where applicable

ACCESS

EPA'S Proposed Sampling Plan:

- Only landlords, building owners, and/or employers can volunteer to participate in the sampling program

Discussion/Problems with EPA's Proposed Sampling Plan:

- Voluntary participation limited solely to landlords, building owners, and/or employers dooms this plan before it starts
- Voluntary participation limited solely to these stakeholders introduces significant bias and drastically constrains the scientific and statistical sampling strategies
- Participational bias is not accounted for in the plan

ACCESS

Solutions/Questions:

- Workers should have equal rights to volunteer to have their workplaces sampled
- Residents should have equal rights to request sampling of their homes and areas of the building that affect their homes, e.g., common spaces and HVACs
- Collect information, (e.g., building type, location, type of ventilation system, cleaning history) on buildings that refuse to volunteer to determine participation bias and whether volunteered buildings are representative of all eligible buildings
- Create a “Participation Task Force” to explore ways to maximize involvement
 - Task Force should examine all possible means for getting access to buildings including the investigation of legal issues affecting access, as well as, develop creative strategies for outreach
 - Task Force should be comprised of representatives of the panel, agency personnel (with expertise in outreach and legal issues impacting access), labor and the community
 - As part of the CBPR process, the EPA should coordinate the formation of this Task Force in cooperation with the liaisons (community and labor) to the panel
- Ultimately, the community and labor’s involvement in participation and outreach activities is contingent upon a scientifically valid sampling plan

GEOGRAPHIC AREAS FOR SAMPLING

EPA's Proposed Sampling Plan:

- Includes lower Manhattan north to Houston St. and east to Clinton St.
- Includes portion of Brooklyn bordering East River
- Boundaries determined by Draft Proposed Sampling Plan Attachment Figure 12 show mapping results from September 13, 2001 aerial photographs (EPA's EPIC photos)
- Areas defined as “confirmed dust/debris”, “probable dust/debris”, and “possible dust/debris” based upon same Attachment Figure 12

GEOGRAPHIC AREAS FOR SAMPLING

Discussion/Problems with EPA's Proposed Sampling Plan:

- Positive step forward to include Brooklyn because Brooklyn was clearly affected by 9/11 contamination
- Draft Proposed Sampling Plan Attachment Figure 12 photograph clearly indicates the plume continuing to the east of lower Manhattan, but the photograph is cut off and does not show lower Manhattan in its entirety
- Draft Proposed Sampling Plan Attachment Figure 12 photograph is a snapshot in time for one day only, i.e., September 13, 2001, and so does not show the path of the dust cloud on other days nor show the changing path of combustion by-products from the fires that burned for several months after 9/11

Solutions/Questions:

- Use a more inclusive set of aerial photographs, as well as other indicators of health effects, to determine geographic boundaries and characterizations

SAMPLING DESIGN

EPA's Proposed Sampling Plan:

- Have developed a complete list of the buildings in the area (7,000)
- Will select buildings from the list of eligible buildings using the “Spatially Balanced Sampling Methodology” (Stevens and Olsen 2004) normally applied to environmental sampling of lakes, rivers and streams
- EPA will determine building type eligibility first, then randomly sample, and then contact building owners
- Buildings are assigned to one of five stratum:
 - Confirmed dust-breached (approx. to Chambers St.)
 - Confirmed dust-not breached (approx. to Chambers St.)
 - Probable/possible dust- (approx. Chambers St. to Spring St on West side near Holland Tunnel)
 - No visible dust (approx. Spring St to Houston, west of Clinton St.)
 - Brooklyn

SAMPLING DESIGN

EPA's Proposed Sampling Plan Cont'd:

- Thirty (30) buildings will be selected in each stratum, for a total of 150 buildings
- This is approximately 2% of the total number of building based upon EPA's estimate of 7,000 buildings
- Complete participation in a building required, i.e., at least one unit on every other floor available
- Alternate buildings will be selected using statistical procedures
- Contingent on development of the signature

SAMPLING DESIGN

Discussion/Problems with EPA's Proposed Sampling Plan:

- Plan depends on a representative sample of adequate number of buildings for sufficient coverage
- Positive change that now determine building type eligibility first, then randomly sample, and then contact building owners

Solutions/Questions:

- What is rationale for choosing 150 buildings total and how did the EPA determine this was an adequate sample size?
- What is the rationale for selecting 30 buildings in each strata and how did the EPA determine this was a sufficient sample size?
- How does the EPA know that the “Spatially Balanced Sampling Methodology” (Stevens and Olsen 2004) normally applied to environmental sampling of lakes, rivers and streams, applies to this situation in an urban environment with significantly different factors?
- What is the EPA's plan for engendering complete participation in a building, especially in commercial/office buildings that may house 50 or more employers in addition to the building owner and building management group?

CONTAMINANTS OF POTENTIAL CONCERN (COPCs)

EPA's Proposed Sampling Plan:

- Four COPCs are asbestos, man-made vitreous fibers (MMVF), polycyclic aromatic hydrocarbons (PAHs), and Lead
- Silica has been eliminated as a COPC

Discussion/Problems with EPA's Proposed Sampling Plan:

- The elimination of silica as a COPC was NEVER discussed at any panel meetings
- In written submitted comments, no panel members recommended eliminating silica as a COPC

CONTAMINANTS OF POTENTIAL CONCERN (COPCs)

Discussion/Problems with EPA's Proposed Sampling Plan Cont'd:

- The EPA's peer-reviewed document titled, "World Trade Center (WTC) Indoor Air Assessment: Selecting Contaminants of Potential Concern (COPC) and Setting Health-Based Benchmarks" states that crystalline silica "has been selected as a COPC for the following reasons:
 - indoor dust levels of quartz in lower Manhattan were found to be significantly higher than those in comparison locations north of 59th St.;
 - quartz has been found in the respirable fraction of air samples, demonstrating a potential for exposure; and
 - quartz is a known component of building construction materials and was known to be released when the WTC collapsed."

CONTAMINANTS OF POTENTIAL CONCERN (COPCs)

Discussion/Problems with EPA's Proposed Sampling Plan Cont'd:

- Mercury was not included as a COPC even though mercury wipe sampling data indicated that in “isolated instances settled dust in lower Manhattan residences contained mercury at levels greater than health-based screening values,” (EPA COPC document) and mercury has been found at elevated levels at several downtown commercial and government buildings, e.g., 130 Liberty Street
- Poor overall sampling data for mercury with a lack of meaningful program oversight in the EPA's 2002 Indoor Air Residential Program should not be used to justify not including mercury as a COPC in this program
- Dioxin was not included as a COPC even though the EPA originally selected dioxin as a COPC because it was “consistently detected across environmental media at concentrations above health-based screening values.”
- Dioxin is also an indicator of other fire combustion toxics, especially other halogenated organics

CONTAMINANTS OF POTENTIAL CONCERN (COPCs)

Solutions/Questions:

- Return silica to the list of COPCs
- Include mercury and dioxin in the list of COPCs
 - Consider a sampling screening method for dioxin, i.e., the Calux ® Assay

BUILDING CHARACTERIZATION, SAMPLING, AND DECISIONS for CLEANING

EPA's Proposed Sampling Plan:

- Units will be selected for sampling on alternating floors with priority given to units facing GZ and/or units served by HVAC systems
- Specific building and space characteristics will be gathered using preprinted checklists
- EPA has designated types of locations as either “*accessible*”, “*infrequently accessed*”, or “*inaccessible*”
- A different sampling approach (number of samples and type of sample methodology) and a different set of benchmarks will be applied to these different types of areas in the clean-up decision making process

BUILDING CHARACTERIZATION, SAMPLING, AND DECISIONS for CLEANING

EPA's Proposed Sampling Plan Cont'd:

- “*Accessible*” locations include floors, area or wall-to-wall carpeting, table tops, desks, kitchen counters, draperies/curtains, interior door handle at the principal entrance and exit to the unit, walls (in the most actively used location in the unit; at hand level for a resident child), upholstered furniture
- “*Infrequently accessed*” locations include window sills, the top of vent ducts or hot water pipes, on top of large appliances such as refrigerators, on top of large objects such as bookcases, bed canopies, and file cabinets
- “*Inaccessible*” locations include behind heavy appliances such as refrigerators, behind or underneath furniture such as chests or beds, behind or underneath equipment such as copying machines, in corners of closets, and above suspended ceilings
- Total number of samples collected will be based on square footage of floor and the number of floors

BUILDING CHARACTERIZATION, SAMPLING, AND DECISIONS for CLEANING

EPA's Proposed Sampling Plan Cont'd:

- Three sets of dust samples will be taken within each unit:
 - Three or more samples in “*accessible*” locations, e.g., floors, table tops, desks, doorknobs
 - Three or more samples will be taken from “*infrequently accessed*” areas, e.g., top of cabinets, high shelves
 - Lead and PAHs will be collected via wipe samples and microvac sampling will be used for asbestos and MMVF in “*accessible*” and “*infrequently accessed*” locations
 - One single composite HEPA sample will be taken from “*inaccessible*” locations, e.g., behind a refrigerator or furniture, under a bed, above ceiling tiles, tops of duct runs to be used for signature presence determination and to determine plume extent for COPCs and will **not** be used to trigger a cleaning

BUILDING CHARACTERIZATION, SAMPLING, AND DECISIONS for CLEANING

EPA's Proposed Sampling Plan Cont'd:

- For Heating, Ventilation, and Air Conditioning (HVAC) sampling for a building:
 - one composite HEPA sample will be taken at outdoor air inlets to HVAC
 - one composite HEPA sample will be taken in air mixing plenums serving sampled floors
 - one composite HEPA sample will be taken at HVAC outlets discharging to location where samples are being taken
 - one bulk sample will be taken of an HVAC filter
- HEPA and bulk samples in HVACs will be used for signature presence determination and to determine plume extent for COPCs and will **not** be used to trigger a cleaning

BUILDING CHARACTERIZATION, SAMPLING, AND DECISIONS for CLEANING

EPA's Proposed Sampling Plan Cont'd:

- A different set of benchmarks will be used for so called “*accessible*” and “*infrequently accessed*” locations
- There are **no** benchmarks for “*inaccessible*” locations or HVACs because contamination in these areas will **not** be used in the cleaning decision-making process
- The benchmarks for the COPCs (to be applied only to “*accessible*” and “*infrequently accessed*” locations are:

Asbestos	<i>Accessible:</i>	5,000 structures/cm ²
	<i>Infrequently Accessed:</i>	100,000 structures/cm ²
MMVF	<i>Accessible:</i>	5,000 fibers/cm ²
	<i>Infrequently Accessed:</i>	100,000 fibers/cm ²
Lead	<i>Accessible:</i>	40 µg/ft ²
	<i>Infrequently Accessed:</i>	400 µg/ft ²
PAHs	<i>Accessible:</i>	150 µg/m ²
	<i>Infrequently Accessed:</i>	1,500 µg/m ²

BUILDING CHARACTERIZATION, SAMPLING, AND DECISIONS for CLEANING

Discussion/Problems with EPA's Proposed Sampling Plan:

- The terms “*accessible*”, “*infrequently accessed*”, and “*inaccessible*” are inappropriately applied labels and are used in the sampling plan to support false assumptions about the potential for harmful exposures
- The plan is skewed away from areas most likely to harbor remaining WTC contamination and the least likely to have been cleaned since 9/11, i.e., samples from high traffic areas most likely to have repeatedly cleaned in the almost four years since 9/11 carry more weight than samples from other locations.
- The areas most likely to be reservoirs for remaining WTC contamination and the least likely to have been cleaned since 9/11 are either eliminated in the consideration for triggering a clean-up, i.e., results from HVACs and “*inaccessible*” areas, or are assigned ridiculously high benchmarks to trigger a cleaning, i.e., “*infrequently accessed*” areas
- The plan allows for the continued, chronic exposure of workers to 9/11 contamination - - “*infrequently accessed*”, and “*inaccessible*” locations as defined by the EPA are accessed by thousands of workers on a daily basis - - these areas are their workplaces

BUILDING CHARACTERIZATION, SAMPLING, AND DECISIONS for CLEANING

Discussion/Problems with EPA's Proposed Sampling Plan Cont'd:

Some of the NYC workers who work in EPA's so called "*infrequently accessed*", and "*inaccessible*" locations **every** day are:

telecommunications field technicians (installation and repair), custodial workers, plumbers, electrical and mechanical engineers, housing inspectors, building superintendents, mechanical engineers, construction project managers, industrial hygienists, architects, fire department inspectors, firefighters and law enforcement personnel, asbestos hazard investigators, HPD repair crews and inspectors, housing appraisers, furniture/equipment inspectors and maintainers, exterminators, demolition inspectors, computer technicians/IT personnel, elevator repair and maintenance workers, HVAC system engineers, high pressure plant maintainers, and public health sanitarians.

BUILDING CHARACTERIZATION, SAMPLING, AND DECISIONS for CLEANING

Discussion/Problems with EPA's Proposed Sampling Plan Cont'd:

- “*Infrequently accessed*”, and “*inaccessible*” locations as defined by the EPA are accessed by residents and other workers during normal activities, such as cleaning, moving furniture, and renovations
- “*Infrequently accessed*”, and “*inaccessible*” locations, such as under a bed, are accessed by children
- Basements are not mentioned in the plan, even though basements are least likely to have been cleaned, are the workplaces for thousands of workers, and are used as storage areas accessed by workers and residents in many buildings, e.g., bicycle storage, supplies, etc.

BUILDING CHARACTERIZATION, SAMPLING, AND DECISIONS for CLEANING

Discussion/Problems with EPA's Proposed Sampling Plan Cont'd:

- The benchmarks for “*infrequently accessed*” areas are outrageously high and have no rationale, health-based or otherwise
- The asbestos benchmark of 100,000 structures/cm² for “*infrequently accessed*” areas, such as on a bookcase or on top of a filing cabinet, is equated to “significant asbestos releases from source materials” (ASTM Experience Standard) as referenced in the EPA's May 2005 Draft Sampling Plan
- The benchmark for PAHs in “*infrequently accessed*” areas, such as on a bookcase or on top of a filing cabinet, is 10 times greater than the benchmark for “*accessible*” locations
- The benchmark for lead in an “*accessible*” location has been increased since the last version of the plan from 25 µg/ft² to 40 µg/ft²
- Composite sampling will lead to the loss of location-specific information and can dilute sample results

BUILDING CHARACTERIZATION, SAMPLING, AND DECISIONS for CLEANING

Solutions/Questions:

- The terms “*accessible*”, “*infrequently accessed*”, and “*inaccessible*” are misleading, falsely applied, and should be changed
- The “*infrequently accessed*”, and “*inaccessible*” areas are most likely to harbor remaining WTC contamination and a greater emphasis should be given to these areas, i.e., more samples collected and the results from these areas should weigh more heavily in the decision making criteria for clean-up
- More samples should be collected from HVAC units, including bends in ducts where contamination can settle
- Sampling results from HVAC units should be used to determine whether HVAC units should be cleaned (in the same way as sampling in units determines whether cleaning will be offered for that unit) and should factor more heavily in the building clean-up decision making process
- The same sampling methods proposed for “*accessible*” locations should be applied to what are now referred to as “*inaccessible*” locations except when there is so much dust in a single “*inaccessible*” location that bulk dust sampling is a more suitable method
- The same benchmarks for “*accessible*” locations should be applied to other locations

DECISION CRITERIA for ACTIVITIES that COULD OCCUR FOLLOWING SAMPLING

EPA's Proposed Sampling Plan:

- Possibilities include clean-up of unit, entire building, or extension of sampling area
- Unit clean-up offered if one COPC exceeds benchmark for “*accessible*” or “*infrequently accessed*” areas **AND** signature is present
- **No** cleaning is offered for COPC exceedances found in “*inaccessible*” areas, such as under furniture, in closets, or above suspended ceilings

DECISION CRITERIA for ACTIVITIES that COULD OCCUR FOLLOWING SAMPLING

EPA's Proposed Sampling Plan Cont'd:

- Building clean-up criteria uses a 95% Upper Confidence Limit (UCL) on a mean contaminant level
- Building Clean-up may be offered if:
 - 95% UCL for the building exceeds the benchmark for a COPC in “*accessible*” or “*infrequently accessed*” areas AND the signature is present, then this “may be considered to provide support to clean the building.”
 - Separate analysis will be done for “*accessible*” or “*infrequently accessed*” areas and each will be compared to its own benchmark
- Source attribution will be a critical factor in determining whether clean-up is offered; no clean-up offered if exceedances can be attributed to source within building or in adjacent areas

DECISION CRITERIA for ACTIVITIES that COULD OCCUR FOLLOWING SAMPLING

EPA's Proposed Sampling Plan Cont'd:

- HVAC cleaning would occur only if the signature is present and a whole building clean-up is triggered based upon the 95% UCL
- Decisions for additional clean-up for other buildings within a stratum will be made by EPA with “appropriate” input
- Decisions for Phase II sampling will be made once Phase I has been completed and analyzed
- Residential and building information and the environmental data collected shall be considered confidential
- Data for individual units will be shared with the occupant
- Building data will be shared with building owners without personal-identifiable information

DECISION CRITERIA for ACTIVITIES that COULD OCCUR FOLLOWING SAMPLING

Discussion/Problems with EPA's Proposed Sampling Plan:

- Clean-up criteria is contingent upon a signature which has yet to be determined or validated
- Use of the 95% UCL, which is based upon properties of normal distribution of data, may not be appropriate for this sampling plan
- Contamination found in HVAC systems does **not** trigger a clean-up

DECISION CRITERIA for ACTIVITIES that COULD OCCUR FOLLOWING SAMPLING

Solutions/Questions:

- Clean-up criteria should not be contingent upon a signature which has yet to be determined or validated
- Exceedances of COPCs in any areas, including “*inaccessible*” areas should factor into the clean-up decision process
- An alternate process or processes should be devised in the decision-making process for whole building clean-up, e.g. additional testing in other units
- Contaminated HVAC systems should trigger a clean-up of the HVAC system and those units and areas of a building served by the HVAC system
- The EPA should prepare public reports regarding the program status and aggregate data analysis (without personal identifiers) on a regular and on-going basis

SIGNATURE RESEARCH

EPA's Proposed Sampling Plan:

- Original concept discussed at EPA panel was to develop a WTC dust signature and a signature originating from the fires
- The fire (PAH) signature has been dropped
- The current proposed signature contains slag wool, gypsum, and elements of concrete
- Five independent labs have been recruited for an analytical validation test
- The analytical validation test will be subjected to an external peer review by experts in the field

SIGNATURE RESEARCH

EPA's Proposed Sampling Plan Cont'd:

- The EPA has previously determined that a signature needs to be:
 1. unique to WTC dusts (distinct from urban dusts);
 2. persistent (not volatile);
 3. homogenous in WTC dust (evenly distributed through samples of WTC dust);
 4. able to be detected with small sample size, low minimum detection limit, and low interference from other dust components; and
 5. consistently found in impacted areas.

SIGNATURE RESEARCH

Discussion/Problems with EPA's Proposed Sampling Plan:

- On EPA's own terms, there is not a signature yet
- The hypothesis for the signature research is vague and states, "A dust sample that contains WTC dust will have slag wool, and elements of concrete and gypsum present in "significant quantities" when compared to typical indoor dust" (pg. 19 of May 2005 sampling plan)
- Criteria have not been determined for validation of the five points listed in the previous slide
- Specific information has not yet been shared with the panel, e.g., background sample collection locations and building and unit characterization where the samples were taken

SIGNATURE RESEARCH

Discussion/Problems with EPA's Proposed Sampling Plan Cont'd:

- The current sampling plan and signature is inadequate to find evidence for the fire plume and associated contaminants
- Slag wool, gypsum, and concrete have a particle size distribution that far exceed other COPCs and have little correspondence with combustion by-products
- No criteria has been proposed for addressing the issue of fractionization - - this is a serious concern considering the relatively heavy weight of the proposed signature components compared to some other known WTC contaminants
- One of the reasons cited by the EPA for abandoning the PAH signature is that no data is available to show how PAHs degrade over time and with exposure to extremely variable conditions
- Similarly, no data has been shared with the panel about the dust “signature” and how it may have changed over time (due to mixing/dilution or other conditions) or how it may vary with elevation, orientation, and distance from the WTC site
- The validation study to be conducted by contract laboratories is an analytical methods validation study, not a study to validate the signature itself

SIGNATURE RESEARCH

Solutions/Questions:

- Continue with the signature research but do not tie it to clean-up decisions in the sampling plan
- Develop criteria necessary to validate the signature for all of those elements the EPA has determined must be present in a signature
- Develop criteria to address the issue of fractionization
- Disclose the data and complete results of the fire signature research

SIGNATURE RESEARCH

Solutions/Questions Cont'd:

- How is the EPA determining what constitutes a “significant quantity” of the signature compared to “normal” urban dust in NYC?
- How is the EPA determining what quantities of the signature must be present at this point in time compared to samples collected immediately after 9//11?
- How is the EPA determining the cut-off point, i.e., at what quantity is the presence of the signature not considered WTC-derived?
- While it may be possible that certain levels of slag wool, gypsum and elements of concrete are WTC-derived, what is the criteria for determining that samples without this material are not also WTC-derived?
- How is the EPA determining the level of the signature elements in samples over distance?

SIGNATURE RESEARCH

Solutions/Questions Cont'd:

Given the almost four year time period that has elapsed since 9/11, and the apparent lack of archived WTC dust samples collected from a range of distances from the site, it may not be possible to address all of the elements EPA scientists have determined must be present to establish a signature for WTC dust.

If that is the case, EPA policy-makers cannot solve that problem by excising any of those elements.

We will all have to acknowledge that no signature is better than a false signature, and accept the difficulties inherent in moving forward with the sampling plan without one.

UNMET PUBLIC HEALTH NEEDS

9/11-related Demolitions

- 4 Albany St. (Deutsche Bank) building demolition - - 10-story structure which occupies ½ block
- 130 Liberty St. (former Deutsche Bank) building demolition - - 1 entire block
- Fiterman Hall Demolition (30 West Broadway) - - 1 entire block
- 130 Cedar St. building demolition
- 133-135 Greenwich and 21-23 Thames St. - - requires reapplication for a permit to demolish; demolition was about to begin unannounced, but community intervened
 - We request clarification and the list mentioned in the WNYC article which stated, “DEP passed on a list of 53 other buildings in and around that neighborhood that need special handling because of their proximity to Ground Zero.”
(www.wnyc.org/news/articles/47437)
- Community Board 1 passed a resolution, with everyone’s support, for post-9/11 health screening for residents and workers (May 17th)